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M. E. ENGLE

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MARBLE GAME

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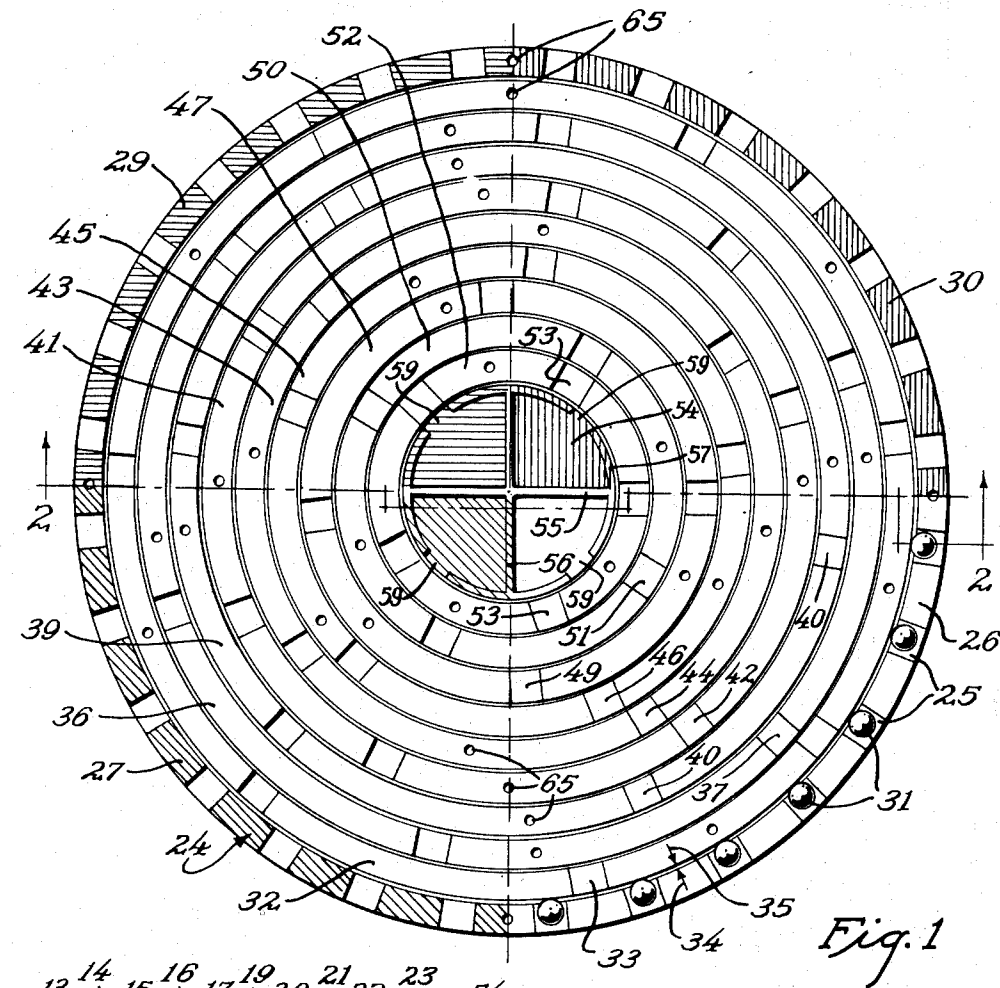


Fig. 1

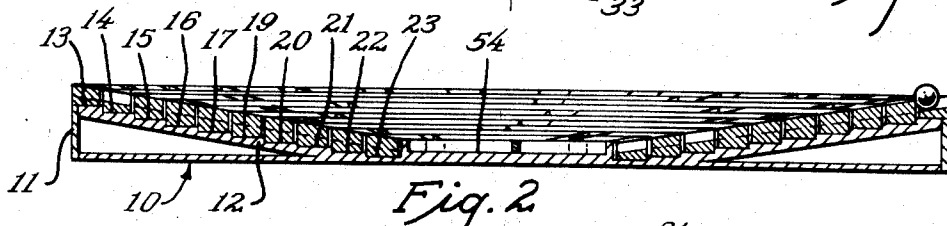


Fig. 2

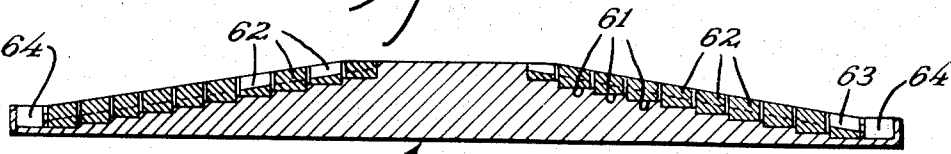


Fig. 3

INVENTOR.  
Merlin E. Engle  
BY Robert M. Dunning  
ATTORNEY

# UNITED STATES PATENT OFFICE

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## MARBLE GAME

Merlin Edward Engle, St. Paul, Minn.

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15 Claims. (Cl. 273-123)

1

This invention relates to an improvement in marble game of a type in which marbles roll by gravity from a starting position to a selected final position.

The object of the present invention lies in the provision of a marble game which is entertaining and educational. The marble game includes a series of movably supported concentric rings which are pocketed to contain marbles. The uppermost ring of the series includes a series of pockets for accommodating all of the marbles of all of the players at the start of the game. The remaining rings include a lesser number of pockets into which the marbles roll by gravity when a pocket in one ring is aligned with a pocket in another. The pockets described are merely inclined notches in the rings so that the marbles will roll from a pocket in one ring to a pocket in a lower ring when the pockets are properly aligned.

A feature of the present invention lies in the provision of a marble game including a series of notched or pocketed concentric rings arranged one within another, the pockets of one ring being unequally spaced with the pockets of the next adjacent rings. Thus it is possible to align a pocket in one ring with a single pocket in the next adjacent ring without aligning any additional pockets in the two rings. As a result it is possible to move one marble from a pocket in one ring to a pocket in the next lower ring without changing the positions of the remaining marbles.

A feature of the present invention lies in the provision of an apparatus of the type described which requires skill and planning to operate. As each ring contains a plurality of notches or pockets and as the marbles of all players are usually simultaneously supported in the notches of any ring, care must be taken in rotating the rings to accomplish a predetermined play. Before each player operates the game in his turn, he must describe the result of the play he intends to make. If any unplanned play shall take place, the player making the misplay is penalized. As a result, considerable thought and planning is required to properly play the game.

A feature of the present invention lies in the provision of a game having a series of concentric rings which are arranged in stepped relation and which are concentric, and in providing inclined pockets or notches in the rings for accommodating marbles. The marbles contained in the pockets of each ring bear against the outer circumference of the next lower ring and are held in the pockets by the next lower ring until

2

the notches of two rings are aligned. When any two notches become aligned, the marble of the uppermost notch will roll into the lowermost notch. Due to the uneven spacing of the notches in most of the rings, care must be taken to prevent an unplanned move of the marbles.

These and other objects and novel features of my invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of my specification:

Figure 1 is a top plan view of the game showing the general arrangement of the parts thereof.

Figure 2 is a cross-sectional view through the game showing the general arrangement of the rings therein.

Figure 3 is a sectional view similar to Figure 2 showing a modified form of construction in which the rings are staged downwardly toward the outer circumference of the game rather than toward the center thereof.

The game is relatively simple in construction, although somewhat difficult to plan. The game includes a base 10 of any suitable material and of any suitable type capable of supporting the rotatable rings. In the particular form of construction illustrated the game piece includes an outer cylindrical wall 11 which supports a downwardly and inwardly inclined ring supporting member 12. The ring supporting member 12 has on its upper surface a series of steps. The outermost and largest diameter step is indicated at 13. Successively lower and smaller diameter steps are indicated at 14, 15, 16, 17, 19, 20, 21, 22, and 23. All of the steps are ring shaped in form, providing a terraced structure which is relatively high near the outer extremity and relatively low near its inner extremity.

The uppermost and outermost step 13 includes a rotatable ring 24 which includes a series of angularly spaced inclined pockets or notches 25. In the form of construction illustrated this outer ring 24 includes twenty-eight pockets 25. The ring 24 is divided into four segments 26, 27, 28 and 30. These segments are preferably colored in different colors and each of the four segments contains seven pockets 25. The division of the outer ring 24 into four segments provides a starting area for each of the players and a marble 31 is placed in each of the pockets 25. In order to differentiate the marbles of individual players, the marbles in each segment are preferably colored similarly to the ring sector in which they are originally placed. Similarly the marbles of each player may be provided with identifying

indicia which distinguishes them from the marbles of another player. The marbles 31, when located in the notches 25 of the outermost ring 24, are held in place by engagement with the outer periphery of the next adjacent ring 32 which rests upon the step 14 and is rotatable thereon. The ring 32 is thick enough to extend above the base of the notches 25 in the outer ring 24 and the marbles are prevented from rolling toward the center of the apparatus by the outer wall of the ring 32. The notches 25 are inclined downwardly and inwardly toward the center of the game so that the marbles 31 have a tendency to roll inwardly and downwardly.

The ring 32 is provided with seven angularly spaced pockets 33 which are not all equi-distant apart. As a result when any of the pockets 33 are aligned with the pocket 25 of the outer ring 24, no other pocket 33 is simultaneously aligned. As a result it is possible to align any of the seven pockets 33 with a pocket 25 in the outer ring without simultaneously aligning any other pair of pockets. In order that the game may be started while all of the pockets 33 are misaligned with all of the pockets 25, identifying pointers or other indicia, such as 34 and 35 are provided on the rings 24 and 32. When these pointers 34 and 35 are together, all of the pockets of the ring 32 are out of alignment with all of the pockets 25 of the ring 24.

The notches 33 are provided with inclined surfaces so that the marbles contained therein tend to roll downwardly and inwardly. The marbles in the pockets 33 are held in place by engagement with the outer periphery of the ring 36. The ring 36 is supported upon the step 15 and is freely rotatable thereupon, the outer wall of the ring being above the level of the bases of the pockets or notches 33 so that the marbles will be maintained in these pockets.

The ring 36 is provided with six pockets 37 having inclined lower surfaces and which may be aligned with the pockets 33. The pockets 37 are spaced unequal angles apart so that only one pocket will align with a pocket 33 of the ring 32 at a time. However, when the notches 37 are spaced from the notches 33, it is difficult to equally estimate which notch 37 will first become aligned with a notch 33, as two or more notches may be almost aligned simultaneously.

A ring 39 rests upon the step 16 and rotates freely thereupon. This ring 39 contains six pockets 40 which are spaced unequal distances apart so that only one notch 40 will be simultaneously aligned with a notch 37. The marbles in the notches 37 are held from rolling inwardly by the outer periphery of the ring 33 until notches of the two rings are aligned. A concentric ring 41 rests upon the step 17 and is freely rotatable thereupon. This ring 41 is of sufficient height to prevent marbles in the notches 40 from rolling downwardly until pockets 42 in the ring 41 align with the pockets 40. The spacing of the pockets 42 is such that no two pair of pockets in the ring 41 and the ring 39 are simultaneously aligned.

The next ring 43 includes four angularly spaced pockets 44. The ring 43 rests upon the step 19 and is rotatable relative to the step and relative to the other rings. The next ring 45 rests upon the step 20 and is freely rotatable thereupon. The ring 45 includes pockets 46 which are five in number.

The next ring 47 includes four angularly spaced pockets 49 and rests upon the step 21 and rotates freely thereon. A ninth ring 50 rests upon the

step 22 and includes four angularly spaced pockets 51. The innermost ring 52 rests upon the step 23 and includes pockets 53 which are five in number.

All of the rings are provided with similar pockets which tend to roll the marbles downwardly and inwardly and the pockets of each ring are so spaced so that only one pocket of each ring will register with a corresponding pocket of a next adjacent ring. However, the spacing is such that it is difficult to estimate which pair of pockets will first become aligned when the two rings are rotated relatively.

The base 10 includes a center portion 54 which is divided by rectangularly arranged partitions 55 and 56 into four sector shaped areas. A wall 57 encircles these sector shaped areas and the walls are provided with notches 59 therein which may be aligned with notches 53 of the ring 52. Only one notch 59 will register with a notch 53 at a time. The wall 57 is of sufficient height to prevent the marbles from rolling into the sector shaped areas until a notch is aligned with a pocket or notch 53.

The four sector shaped areas of the center portion are preferably colored similarly to the four sections of the outermost ring 24 so that each player has a corresponding area into which his marbles must be rolled. This fact considerably complicates the playing operation and if a marble of one color should drop into a pocket 53 in the ring 52 at a point substantially spaced from the notch 59 leading to the area into which his marbles must drop, it may be impossible to rotate the ring 52 so that the marble will fall into the proper sector. In preferred arrangement the base 10 and the outer ring 24 are provided with some means of synchronization so that the sector shaped area at the center of the game board is in the same quadrant as the marbles of that player at the start of the game.

In playing the game, the marbles of each player are placed in the pockets 25 in the outermost ring 24, while the outer ring is properly located relative to the base and while the marks 34 and 35 are aligned. If four players are playing the game, each player may be assigned the marbles in one section of the ring. If three players are playing, the marbles of one section may be omitted. If two players are playing the game, each player may use the marbles of one quadrant of the board or half of the board.

The starting player announces the play he intends to make by touching or pointing to a particular marble and by stating that the marble indicated is to drop into a particular pocket which is also indicated. The uppermost ring 24 is next rotated to bring about this play. If the play is found impossible to accomplish without some other marble first dropping into a pocket, the play is stopped and the player loses his turn.

After the marbles are dropped into the pockets of lower rings, if the play indicated can not be made without first dropping another marble into an unindicated pocket, the player unable to make the play is required to place the marble indicated back in a pocket in the outermost ring 24 to restart the procedure. Obviously if a player is able to work a single marble into a ring lower than any containing marbles of his opponent, the procedure for directing this marble by successive plays into the center quadrant is relatively simple. However, in most instances the players are able to advance the marbles from ring to

5

ring at about the same rate and therefore the movement of any ring in making a play is correspondingly complicated. Furthermore, if one player spends several turns in working a single marble to the center quadrant, the other player is usually able to advance one or two of his marbles beyond the remaining marbles of the first player, thus equalizing the game.

In Figure 3 of the drawings I disclose a modified form of construction, which is substantially the reverse of the construction illustrated. In the form of construction illustrated in Figure 3, the base 60 is provided with a terraced upper surface including a series of concentric circular steps 61 and supporting concentric rings 62. In this structure the marbles are started in the uppermost and outermost ring and worked toward the larger diameter and outermost ring. From the outermost ring 63, the marbles may pass through suitable notches into a peripheral trough shaped groove 64 which is divided into quadrants similar to the center portion of the previously described game construction. In other words, the modification illustrated in Figure 3 is merely convex instead of concave so that the marbles are worked outwardly from the center rather than inwardly toward the center.

The various rings of the games may be rotated in any suitable manner. Ears or projections may be provided on the rings by means of which they may be rotated. In the form of construction illustrated, I provide one or more apertures 65 in each of the rings. These apertures are designed to accommodate a peg or pencil point by means of which the rings may be rotated.

In accordance with the patent statutes, I have described the principles of construction and operation of my marble game, and while I have endeavored to set forth the best embodiments thereof, I desire to have it understood that these are only illustrative thereof and that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A marble game including a series of concentric ring means having inner and outer walls, the outer walls of one ring means being closely adjacent to the inner wall of the next adjacent ring means, said ring means being relatively rotatable, said ring means having angularly spaced notches therein, the bases of said notches being inclined to direct a marble toward a next adjacent ring means, the lower end of each notch being below the level of the adjoining wall of the next adjacent ring means but no higher than the upper ends of the notches of the next adjacent ring means, the bases of said notches directing a marble into a registering notch of the next adjoining ring means through the lower end of the notch and into the higher end of the registering notch of the next adjacent ring means.

2. The structure defined in claim 1 and in which the angular distance between the notches of one ring means differs from the angular distance between notches of the next adjacent ring means.

3. The structure defined in claim 1 and including an enclosure into which marbles are guided by the notches of the lowermost ring means.

4. The structure defined in claim 1 and including an enclosure into which marbles are guided by the notches of the lowermost ring means, said

6

enclosure having a wall concentric with said ring means and extending closely adjacent to said lowermost ring means and above the level of the lower end of the notches of the lowermost ring means, and notches in said last named wall which may register with a notch of the lowermost ring means.

5. A marble game including a series of concentric ring means arranged in stepped relation, said ring means being relatively rotatable, said ring means having notches therein in angularly spaced relation, said notches inclining toward the next lower ring means, the bases of the lower ends of said notches being below the level of the next lower ring means but not lower than the upper ends of the notches of the next adjacent ring means whereby marbles in said notches will be held confined in a notch until this notch registers with a notch of the next lower ring means, the notches extending substantially radially of said ring means.

6. The structure defined in claim 5 and in which the notches of one means are spaced apart an angular distance unequal with the angular spacing of the notches of the adjacent ring means.

7. The structure described in claim 5 and including a receptacle into which marbles are guided by the notches of the lowermost ring means.

8. The structure described in claim 5 and including a receptacle into which marbles are guided by the notches of the lowermost ring means, the receptacle having a wall extending closely adjacent to the lowermost ring means and extending above the level of the lower ends of the notches in the lowermost ring means, the receptacle wall having passages therethrough registrable with the last named notches to permit passage of marbles therethrough when a receptacle wall notch and a lowermost ring notch are in registry.

9. The structure defined in claim 5 and in which the ring means step downwardly toward the center thereof.

10. The structure defined in claim 5 in which the ring means step downwardly toward the outermost ring thereof.

11. A marble game including a series of concentric rings, means supporting said rings in stepped formation, said rings having angularly spaced radially extending notches therein through which marbles may pass entirely through the ring, the bases of said notches directing the marbles toward a next adjacent lower ring, the base of each notch being below the level of the adjoining edge of the next lower ring but not above the base of the grooves in this next lower ring whereby marbles will move from one ring to the next lower ring when the notches therein are in registry.

12. The structure defined in claim 11 and in which the angular distance between the notches of adjoining rings is different.

13. The structure defined in claim 11 and including a receptacle into which the marbles may pass from the notches in the lowermost ring, and means dividing this receptacle into angularly spaced compartments.

14. The structure defined in claim 11 and including a receptacle into which marbles may be directed from the notches in the lowermost ring, a receptacle wall adjacent to the lowermost ring and extending above the level of the bases of the notches of the lowermost ring, and notches

7

in the receptacle wall registrable with the notches of the lowermost ring.

15. A marble game including a series of concentric rings having inner and outer walls, the outer wall of one ring extending in closely spaced relation to the inner wall of the next adjoining ring, said rings being in stepped relation, with the largest ring outermost, inwardly inclined radially extending notches in said rings, the lower ends of the notches of one ring being below the level of the outer wall of the next adjoining ring, but not below the level of the upper ends of the notches in the next adjoining ring whereby the marbles may roll inwardly when the notches

8

of two rings are in registry but are held in place when the notches are out of registry.

MERLIN EDWARD ENGLE.

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